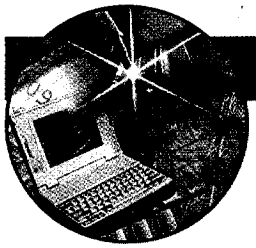

Intelligent Commerce: A Bright Idea

"The engine also can perform trend analysis-calculating rebate schedules and determining how much volume was ordered from a particular supplier."

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For just about any company engaged in purchasing and fulfillment activities, electronic commerce systems have become a virtual business necessity. Until recently, however, many small- to mid-sized companies found such systems cost-prohibitive; thus, they were forced to either manually place orders for supplies or utilize value-added network services (VANs) with limited capabilities. The Internet changed all this, providing a cost-free forum and two-way communications for businesses to engage in procurement activities. Nonetheless, many small- to mid-sized businesses still have found themselves at a competitive disadvantage, unable to attain the maximum operational efficiencies or obtain the volume discounts and rebates offered to larger companies.

Now, however, the dawn of "intelligent commerce" promises to level the playing field, providing small to mid-sized players with the tools necessary to band together into industry buying groups and leverage their strengths to effectively compete in the big leagues. This "force of one" concept is based on the recent custom development and production of sophisticated online decision support software, otherwise known as "intelligent trading engines." These advanced technologies, developed for use by trading communities or industry buying groups-as well as companies with many divisions-are destined to revolutionize Web-based supply chain management and ultimately increase the market share of SMEs.

One of the primary goals of an intelligent trading engine is to provide better visibility of transactions-such as the placement of orders by distributors to suppliers-to the administrators of buying groups. In this manner, administrators obtain enhanced accountability, enabling them to ensure that participants in the buying group are conducting transactions with the most reliable and cost-efficient suppliers. To accomplish this task, the trading engine maintains a central archive of all transactions and all activities associated with those transactions for the entire community.

The chief benefit of this archive is the improvement of service performance by the overall buying group. By working with accurate group-wide data, the buying group can achieve better rebate optimizations from suppliers by tracking progress toward various steps in approaching their goals. For example, by comparing the total value of purchase orders submitted to suppliers against the total value of invoices received, group members as well as group administrators can determine the dollar savings from both order consolidators and supplier substitutions.

Besides providing archiving capabilities, intelligent trading engines can perform sophisticated analytical tasks, such as determining whether certain parts ordered by a distributor from a particular supplier can be more quickly or cost-efficiently procured from a different supplier. In such cases, the engine automatically checks whether the distributor is willing to accept order substitutes and proceeds to change the order. The engine also can perform trend analysis-calculating rebate schedules and determining how much volume was ordered from a particular supplier. Based on these calculations, administrators of the buying group can learn how to better manage transactions and determine how to adjust future procurement activities to obtain valuable rebates and preferred treatment from suppliers.

Intelligent commerce also is beneficial on the supplier's or manufacturer's end, however. Intelligent trading engines enable members of buying groups to consolidate hundreds of separate orders into a single purchase order.

While the buying group thereby attains bet-

ter buying power and a higher fill rate, the manufacturer or supplier receives a single consolidated purchase order rather than numerous separate ones, greatly reducing the overhead of document processing. This consolidated order capability also enables suppliers to send the shipment to a single location rather than to each individual distributor, thereby lowering shipping costs by streamlining logistics.

In addition, intelligent trading engines enable members of a buying group to trade among themselves, thereby reducing overstocked inventories as well as the costly process of returning surplus items to suppliers. For instance, a distributor with an excess supply of a specific part can advertise its availability to other distributors. If Distributor X issues a purchase order to Supplier Y for a particular part, the engine doesn't process that transaction until first checking whether fellow distributors advertised a surplus of that requested part. If the engine locates a better deal offered by Distributor Z, it automatically issues a new purchase order and notifies Distributor X of the change.

Another benefit provided by intelligent trading engines to buying groups is its ability to automatically reconcile purchase orders, advance shipping notices and invoices online in a paperless environment. This reconciliation utility improves the visibility of any back order or other non-fulfillment conditions. If there's a discrepancy between figures listed on purchase orders and invoices, the trading engine sends an e-mail or EDI message to the parties involved. A "Track and Trace" mechanism enables companies to submit queries to the trading engine's data repository and generate requested reports and statistics, as well as view the entire transaction history from purchase order through final payment order.

Intelligent trading engines also improve group-wide communications. Previously, many small to mid-sized companies could only afford VANs with one-way communications-the issuing of purchase orders from the distributor to the supplier. Intelligent commerce, however, enables distributors to receive purchase order acknowledgements, advance ship notices and invoices from the suppliers so that they know in advance whether the order will be fulfilled.

While striving to achieve all of these goals, intelligent trading engines follow certain "trading rules" established by the buying group's members. Each member can fill out an online profile indicating whether they are willing to accept order substitutions, participate in consolidated orders, etc. The profiles then are stored with other current and historical transactions and trading parameters in the archive. From these, the trading engine can construct "opportunity matrices" on which to base decision support operations.

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Depending on members' preferences, intelligent trading engines can operate in one of two modes. In the "broker mode," the engine acts as an electronic broker on behalf of group members that submit purchase orders. As such, the engine considers such opportunities as best-value comparisons (which supplier will give the best deal?), generic part distribution (is a part required from a specific vendor, or will any equivalent part do?), and logistical optimization (is there a cost benefit to consolidating orders?). In "standard mode," the engine acts more as a messaging and archival tool, passing transaction sets through to intended recipients and tracking related documents for on-line reconciliation and reporting.

The intelligent trading engine is but one piece of a whole intelligent commerce solution. In order to operate meaningfully, it needs both the Track and Trace package and a transaction server. The transaction server takes client input, determines whether it is valid EDI and performs whatever translations are necessary for the engine to function properly. Using data provided by the transaction server, the engine feeds archival and process status information to the database as well as further transactions back to the transaction server, which forwards them to their ultimate destinations. The Track and Trace package is essentially the user interface into the transaction set archives and processing logs built by the engine. This module enables the online reconciliations between purchase orders and the subsequent follow-on documents as well as higher-level program status reports and throughput statistics.

As a result of the unprecedented benefits generated by the emergence of intelligent trading engines, Internet commerce will officially become intelligent commerce. This new phenomenon will enable any buying group of small to mid-sized companies to reap the same rewards that larger competitors have gotten for years: rebates, volume discounts and favorable treatment by suppliers. Ultimately, this competitive advantage-combined with enhanced operational efficiencies and purchasing power-will translate into higher profits and customer satisfaction.

Looking into the future, intelligent commerce seems destined to expand into such areas as customer-to-business interaction, e-catalogs and real-time bidding. It's an exciting prospect and one that just about any small to mid-sized business with high volume orders would benefit from exploring.

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